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FUNCTIONAL, SECTORAL AND REGIONAL TRANSFORMATION OF THE ECONOMY OF THE MISKOLC AGGLOMERATION REVISITED

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Abstract: Among the segments of economic development and shifts in the Miskolc agglomeration the present study introduces some characteristics of the functional, sectoral and regional differentiation of economic transformation. The functional, sectoral and geographical distribution of business corporations in the 35 settlements of the Miskolc agglomeration in 2016 may help to interpret and assess economic processes adapted to local characteristics in the past quarter-century. During the research, only those operating businesses were considered that had net sales of 20 million HUF or more in 2015. An empirical study of 640 active businesses in 35 settlements reveals the regional inequalities and sectoral concentration of the economy. The intensity of the spatial structure of the economy is uneven within the Miskolc agglomeration and spatial specialization can also be observed in the economic hinterland of Miskolc. The economic development induced significant changes in the spatial structure of three towns (Felsőzsolca, Nyékládháza, and Alsózsolca). Services (e.g. personal, distributive, and services for other businesses) as well as commerce, logistics and leisure functions concentrated in these towns strengthened their positions in the spatial structure. In addition, the technological and industrial parks of these towns are playing an increasing role. However, the towns of the agglomeration cannot or can hardly be regarded as economic competitors of Miskolc, i.e. the urban region has not become polycentric, and the inhabitants of these towns are not totally independent of Miskolc. In the case of Sajóbábony (due to its special situation) and Szikszó (despite its economic recovery) the functional, sectoral and regional transformation is not clear yet. Of the villages, only four (Kistokaj, Mályi, Szirmabesenyő, Hernádnémeti) could significantly improve their economic positions, and were able to rival the dynamically transforming three towns of the agglomeration. On the outer edge of the agglomeration the dynamism and the impact of businesses on the formation of the structure of the economic space is less and less detectable. Here, settlement differentiation is also influenced by transport accessibility, the innovation capabilities of local communities and other geographical factors.

Key words: Miskolc, agglomeration, suburbanization, transformation of the economy

INTRODUCTION

In the emergence and development of agglomerations in Hungary the political and socio-economic processes have been present for decades and their effects are also stilldetectable today (Tímár, 1999; Dövényi and Kovács, 1999; Kovács, 2005; Keil and Young, 2011). In my previous studies I introduced some aspects of the social processes among the stages of urbanization. The

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transformation of the local social structures of settlements was coupled with changes in the geography of society and the economy, and with increasing disparities within the Miskolc agglomeration (Kristóf, 2014, 2015, 2016).

Socio-economic disparities were increased by suburbanization (Tímár, 1999; Dövényi and Kovács, 1999; Kovács, 2005; Keil and Young, 2011), whose transforming effects on the built environment and the local society were only present in 10 settlements heavily gravitating to Miskolc (Kristóf, 2015), putting the small towns and villages affected by this process in a particularly favourable position. In the 10 settlements most heavily affected by social suburbanization (Arnót, Onga, Kistokaj, Mályi, Felsőzsolca, Szirmabesenyő, Nyékládháza, Bükkaranyos, Bükkszentkereszt and Kisgyőr) a representative household survey (N = 975) was carried out in the spring of 2016. Questionnaires are being processed continuously; however, I also examined a strongly related topic, the economic transformation of the Miskolc agglomeration and its most important sectoral and geographical consequences with the help of data on active businesses from the Opten Company Database. The number and composition of businesses provide useful information on the structure and geography of the economy of the region.

It is an important step in every piece of research to delimit the study area, which in this case is the settlement of the Miskolc agglomeration. The most recent (2014) delimitation of the Miskolc agglomeration (36 settlements) is based on the commuting of the workforce to the centre (Miskolc) of the urban region. My database covers the active businesses present in the 35 settlements of the Miskolc agglomeration, and obviously the centre of the agglomeration (Miskolc) is not included in the study. The Opten Company Database includes the basic data (e.g. headquarter, net sales, main activity, etc.) of all active businesses present in the settlements of the Miskolc agglomeration in 2016. During the creation of the empirical database, inactive businesses were ignored and the most recent (2015) data on net sales were considered. Active businesses with at least 20 million HUF annual net sales were included in the database. Only those active businesses (640) were considered whose headquarters were located in one of the 35 settlements of the Miskolc agglomeration. Active businesses headquartered in other settlements, but operating in one of the examined 35 settlements were ignored (as well as businesses headquartered in Miskolc), because in my opinion these companies do not (even indirectly) indicate the restructuring of the economy related to suburbanization. Naturally, this arbitrarily created database does not include all the companies affected by economic suburbanization, especially because it is not known whether entrepreneurs and their enterprises were relocated from Miskolc or not.

I wanted to disregard micro- and small enterprises (often born of necessity), where fluctuations are the largest and their net sales, their impact on spatial structure and their geographic specialization is rather small. The 20 million HUF annual net sales thresholds was set because in-depth interviews with CEOs revealed that above this threshold companies are able to employ at least one employee. Although small enterprises were disregarded, it is expected of a viable mid-sized company to have at least one employee and at least 20 million HUF annual net sales. In my opinion, these companies can play a ‘real’ role in the functional, sectoral and geographical transformation of the Miskolc agglomeration. During the sectoral categorization of companies I only took considered the main activity, while headquarters were identified on the level of settlements, and ambiguous cases were clarified by on site studies.

Among the economic actors special attention was paid to the sectoral and geographical (settlement level) distribution of active businesses and to industrial parks, which can help to interpret and evaluate the economic processes of the past quarter-century adapted to local peculiarities (Kovács and Szabó, 2013; Szabó et al., 2014). With the help of the empirical studies not only general statements can be formulated about the economic processes in the Miskolc agglomeration, but I can shed light on the differences in the transformation of settlements and on the related economic mechanisms, too. However, this goal can only be achieved if I outline (as a starting point and benchmark) the spatial structure of the economy of the Miskolc agglomeration during the era of the regime change.

THE SPATIAL STRUCTURE OF THE ECONOMY OF MISKOLC AND ITS AGGLOMERATION IN THE 1990S

Space-forming social and geopolitical events at the end of the 20th century led to the total or partial transformation of economic structures inherited from socialism and to adaptation to new expectations in Hungary, too, even if temporary disturbances occurred in this process in the 1990s (Enyedi, 2012; Herman et al., 2016, 2017; Ilie et al., 2017; Koós, 2004; Szirmai, 2011). It is widely known that the Borsod Industrial Region was long characterized by state subsidized (otherwise unprofitable) productive capacities, unbalanced economic structure, underdeveloped and out-of-date infrastructure, unsuccessful privatization, thousands of unemployed people and a high rate of emigration (Süli-Zakar, 1996, 1997). The spatial structure of the region was transformed by a number of governmental and sectoral decisions, forcing the economy of the region to follow a special path.

The most important industrial plants of the county, whose recession had drastic economic consequences (Süli-Zakar, 1988), settled down in this region. Following the cease of state owned manufacturing, most jobs were lost in the region and sectoral transformation continues to this day (Süli-Zakar, 2012). In the era of the regime change (1989-1993) four factors influenced the heavy industry of Miskolc and its agglomerationespecially negatively: inflation, devalued resources, corporate management and the cease of state subsidies. The sectoral recession in the region caused a rapid spillover effect since the centres of the industrial region were also the major employment, trade, educational and service administrative centres of the peripheries (Süli-Zakar, 1988, 1996). The crisis of the industrial plants of Miskolc devalued the traditional industrial site, however, problem solving solutions in the 1990s aimed to save these rustbelts and no sectoral and spatial shifts occurred at that time yet (figure 1).

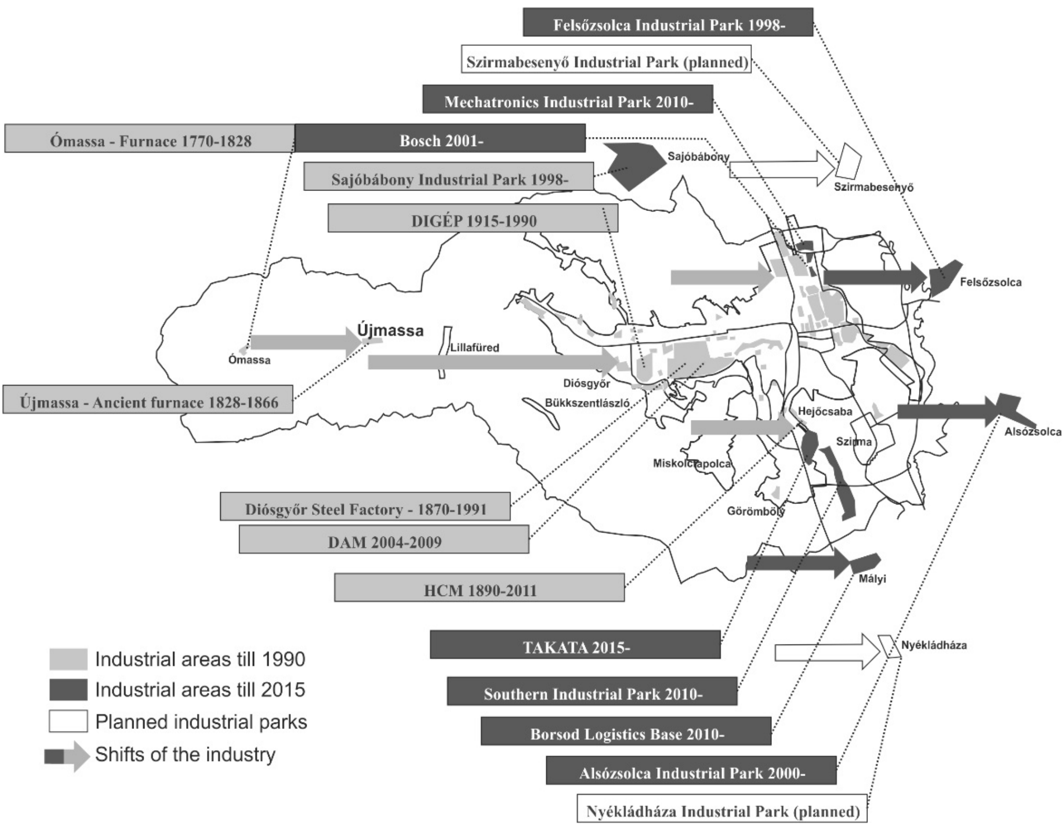

Figure 1. The geographical location of the industry of Miskolc and its spatial and sectoral shifts (1770-2015)

Before the regime change those industrial plants of national or regional significance which employed thousands of workers (sometimes more than ten thousand) were at the core of the economy of Miskolc (Süli-Zakar, 1988). The recession of two major heavy industrial plants (Lenin Steelworks later called DIMAG then DAM; December 4th Wire Factory later called D&D) of Miskolc and its region, generated partly by unsuccessful privatization, turned to economic depression, which resulted in a sectoral and regional crisis (Süli-Zakar, 1996). Besides the drastic decrease in output (the output in Diósgyőr, which was 1,07 million tons in 1985, fell to one-fifth / 190 thousand tons / by 2000) out of date iron and steel producing technologies were also typical.

Due to the investments of the socialist era, an inner circle of settlements with a dominantly industrial profile had occurred around Miskolc by the 1980s, where mainly specialized industries (e.g. construction, production of raw chemical materials, manufacturing of measuring instruments and plastics) were located. In addition, there were some settlements where mines and/or machine and screw factories were present. Heavy industries and mines concentrated in the northern, north-eastern part of the agglomeration (e.g. Felsőzsolca, Sajószentpéter, Sajóbábony, etc.), while the premises of construction companies were located on the southern edge (e.g. Nyékládháza, Mályi, Hejőcsaba, etc.). The zone of settlements with mainly industrial profile surrounded Miskolc from the southwest to the north, and northwest, however in the south-eastern sector of the agglomeration this zone was elongated (Bőcs, Hernádnémeti) and deficient (Süli-Zakar, 1988). At the same time, there were also some dormitory villages (e.g. Onga, Kistokaj, Szirmabesenyő, etc.) present in the Miskolc agglomeration.

The sectoral transformation beginning with the regime change destabilised the former geographical distribution of the economy, as well as the networks and the structural, organizational regime of socialist companies. This was manifested in a complex spatial restructuring process, which resulted in the emergence of new connections between workplaces and places of residence, and in the diverse development of different sectors of the urban region, similarly to other Hungarian cities (Dövényi and Kovács, 1999; Kovács, 2005) and international tendencies (Keil and Young, 2011). Due to the economic regime change new services and products emerged, new market segments opened, which resulted in the occurrence of new gravity connections in the Miskolc agglomeration. This transformed geographical spaces by giving them new functions (Süli-Zakar, 1996). The process was coupled with the weakening geographical separation of the basic social functions, thus new town functions appeared in the formerly monofunctional local socio-economic spaces (Tímár, 1999). Due to the increasing level of foreign direct investments changes occurred in land use and sectoral transformations in the Miskolc agglomeration.

The economic state of settlements of the Miskolc agglomeration in the 1990s was determined by large industrial companies (e.g. Coal mines of Borsod, North-Hungarian Chemical Works, the glass factory of Sajószentpéter, the screw factory of Onga, etc.) and by the number of active businesses and their geographical and sectoral specialization. Data on the number and distribution according to size of sole proprietorships and partnerships havebeen available since 1995 (tables 1 and 2). According to 1995 data the number of businesses per 1000 people in Miskolc were 68.5, a figure (67.9) that did not change significantly by 2012. Regarding the settlements of the agglomeration, it can be stated that by 1995 the number of businesses stabilized and only slight changes occurred by 2012.

In the 1990s multidirectional socio-economic processes took place in Miskolc and its agglomeration. The area of influence of Miskolc became larger and its relationships (connections among subcentres, residencies and places of production) became more intensive and multilateral (Süli-Zakar, 1996). The process affected the area of urbanized space, its inner cohesion and it also caused changes in the geographical scale of organizing economic processes. The study of social suburbanization (Kristóf, 2014, 2015, 2016), with special regard to the volume of commuting, is usually present in articles related to the topic (Szirmai, 2011), however, the examination of companies providing workplaces is missing from the literature. Besides the analysis of the presently noticeable consequences of the past, a new research task is to outline (with the help of the location of premises and net sales of active businesses) how the geographical structure of the economy of the Miskolc agglomeration has transformed by now.

GEOGRAPHICAL STRUCTURE OF THE ECONOMY OF THE MISKOLC AGGLOMERATION TODAY

The past two and a half decades have transformed the spatial structure of the Miskolc agglomeration, changed the socio-economic significance of settlements, the local milieu of companies and their competitiveness. In the case of Miskolc and its agglomeration the most important economic changes of the past quarter century have been the strengthening of manufacturing, transportation, cargo handling and logistical centres relocating to the foreground of Miskolc. This paper introduces the peculiarities of this process according to the sectoral distribution of companies, their net sales and the geographical structure of the economy determined by their location decisions (tables 1-8). As a result of the methods applied, the settlements can be well differentiated from each other, which allow the interpretation of geographical and sectoral differences of economic processes. This has enabled me to formulate not just general, but specific theses about the transformed geographical structure of the economy of the Miskolc agglomeration.

THE REGIONAL AND SETTLEMENT-LEVEL STATE AND NET SALES OF BUSINESSES IN THE MISKOLC AGGLOMERATION

There are significant differences amongthe active businesses of the 35 settlements of the Miskolc agglomeration. According to annual net sales, 43.7% of the examined companies belonged to the 20-50 million HUF interval, 24.2% to the category between 50 and 100 million HUF, while 24.5% fitted into the 100-500 million HUF interval and only 3,3% of them had more than 1 billion HUF annual net sales (tables 1-3). Companies with the highest net sales areobviously engaged in manufacturing, or chemical industries, but wholesalers and road freight transportation companies also have a significant share among the businesses with more than one billion HUF annual net sales.

Among the 35 settlements of the agglomeration,with a total of more than 90 thousand inhabitants, towns stand out which concentrate 50.7% of the population and 52.3% of businesses with more than 20 million HUF net sales in 2015 (table 1).

Table 1. Number of businesses located in the towns of the Miskolc agglomeration according to net sales
(Data source: Edited by the author according to the Opten Company Database, 2016)

Towns	Population (2015)	Active businesses (per 1000 people)		Net sales (2015)						
		1995	2012	20-50 million HUF	50-100 million HUF	100-500 million HUF	500-1000 million HUF	above 1000 million HUF	Total	Total 1000 people / business
Felsőzsolca	6521	61,1	62,7	24	19	20	8	3	74	11,35
Sajószentpéter	11679	35,7	36,1	25	15	18	-	-	58	4,97
Nyékládháza	4876	55,4	52,3	19	10	15	3	1	48	9,84
Szikszó	5410	41,5	49,2	20	11	9	-	1	41	7,58
Alsózsolca	5683	35,6	33,7	19	8	5	3	1	36	6,33
Onga	4746	39,3	37,2	16	11	3	2	-	32	6,74
Sajóbábony	2786	29,8	30,3	7	4	7	-	7	25	8,97
Emőd	4785	31,5	36,6	14	3	3	1	-	21	4,39
Total	46486	68,5	67,9	144	81	80	17	13	335	7,21

However, there is only a seeming balance between towns and villages, since tables 1 and 2 show that 60% of companies (30) with higher net sales (above 500 million HUF) are located in the 8 towns of the agglomeration,while companies having more than 5 billion HUF net sales are located in Sajóbábony and in Alsó- and Felsőzsolca (table 3).

The figures per 1000 people of companies with more than 20 million HUF net sales show the differences among settlements well. In the case of towns a fourfold difference (Felsőzsolca-Emőd) can be detected. Given the fact that the high values of Felsőzsolca, Sajóbábony and Nyékládháza reflect the survival of the successors of corporations inherited from socialism, the low value of Sajószentpéter is surprising. In this most populous town of the agglomeration there was not a single active company with annual net sales in 2015 reaching 500 million HUF. The industry of Sajóbábony shows a more successful transformation in terms of the economy, proprietorship and output, since the net sales of seven of its examined companies (25) were above 1 billion HUF and these active businesses accounted for half of the revenues of the 21 companies of the agglomeration with more than 1 billion HUF net sales (table 3).

Table 2. Number of active businesses located in the villages of the Miskolc agglomeration according to their net sales
(Data source: Edited by the author according to the Opten Company Database, 2016)

Villages	Population (2015)	Active businesses per 1000 people		Net sales (2015)						
		1995	2012	20-50 million HUF	50-100 million HUF	100-500 million HUF	500-1000 million HUF	above 1000 million HUF	Total	Total 1000 people/ business
Mályi	4016	74,4	64,7	22	14	14	2	1	53	13,20
Szirmabesenyő	4181	58,2	62,4	23	9	8	1	1	42	10,05
Kistokaj	2084	59,5	73,8	13	9	7	-	1	30	14,40
Hernádnémeti	3421	33,5	28,9	9	4	10	1	-	24	7,02
Arnót	2420	60,9	63,5	8	8	7	-	-	23	9,50
Gesztely	2790	34,2	33,6	7	4	4	-	-	15	5,38
Harsány	2016	30,2	39,9	4	3	5	1	1	14	6,94
Hernádkak	1664	42,1	37,5	4	2	4	1	1	12	7,21
Boldva	2360	22,0	33,8	4	2	3	1	-	10	4,24
Sajólád	2811	26,9	23,3	4	1	2	1	1	9	3,20
Kisgyőr	1680	30,0	34,7	7	-	-	1	-	8	4,76
Bükkszentkereszt	1206	47,6	52,4	5	2	1	-	-	8	6,63
Bükkaranyos	1478	28,2	41,4	6	1	1	-	-	8	5,41
Sajópetri	1387	25,7	29,6	1	1	3	1	1	7	5,05
Újcsanálos	861	17,5	25,1	1	4	1	-	-	6	6,97
Sajóecseg	1040	30,9	40,5	2	1	1	-	1	5	4,81
Varbó	1069	23,3	37,7	3	1	1	-	-	5	4,68
Sajókeresztúr	1483	54,4	44,7	3	-	1	-	-	4	2,70
Sajóvámos	2122	36,3	22,7	2	1	1	.	-	4	1,89
Sajókápolna	408	11,7	19,6	2	-	1	-	-	3	7,35
Sajópálfala	728	26,7	38,7	2	-	1	-	-	3	4,12
Alacska	778	15,2	22,5	-	3	-	-	-	3	3,86
Sajólászlófalva	425	26,5	16,3	-	1	1	-	-	2	4,71
Parasznya	1128	22,2	26,1	1	1	-	-	-	2	1,77
Radostyán	601	27,5	39,7	2	-	-	-	-	2	3,33
Kondó	593	18,7	19,6	1	1	-	-	-	2	3,37
Sajósenye	429	20,7	25,0	-	1	-	-	-	1	2,33
Total	45179	-	-	136	74	77	10	8	305	6,75

Even greater differences can be observed among the villages (27) of the agglomeration, as regards the number of businesses with more than 20 million HUF net sales (table 2). There were only

8 villages where at least one company with more than 1 billion HUF net sales was present. My previous study found that among these villages Kistokaj, Szirmabesenyő and Mályi are unambiguously suburban settlements with respect to social processes. It is noteworthy that in these settlements and in Hernádnémeti the number of viable companies with mid-size net sales (100-500 million HUF) capable of revival and innovative technology shift and having enough capital was high. The fact that in 5 settlements the net sales of the largest active businesses remained below 100 million HUF is even more noteworthy and considerable with respect to the geographical structure of the society and the economy. In this respect, in Radostyán the net sales of only two businesses (a metal works company with 40 million HUF net sales and a car maintenance company with 21 million HUF net sales) reached the threshold of our examination (altogether there were 20 active businesses present in the settlement as of July 1, 2016), but the state of Parasznya, Kondó, and Sajósenye was also not much better (table 2). This latter settlement was characterized by the least number of businesses (6), only one of which reached the threshold of the study. Naturally, these settlements were not affected by economic suburbanization, or more precisely, one or two small or medium enterprises did not change their position in the economic spatial structure.

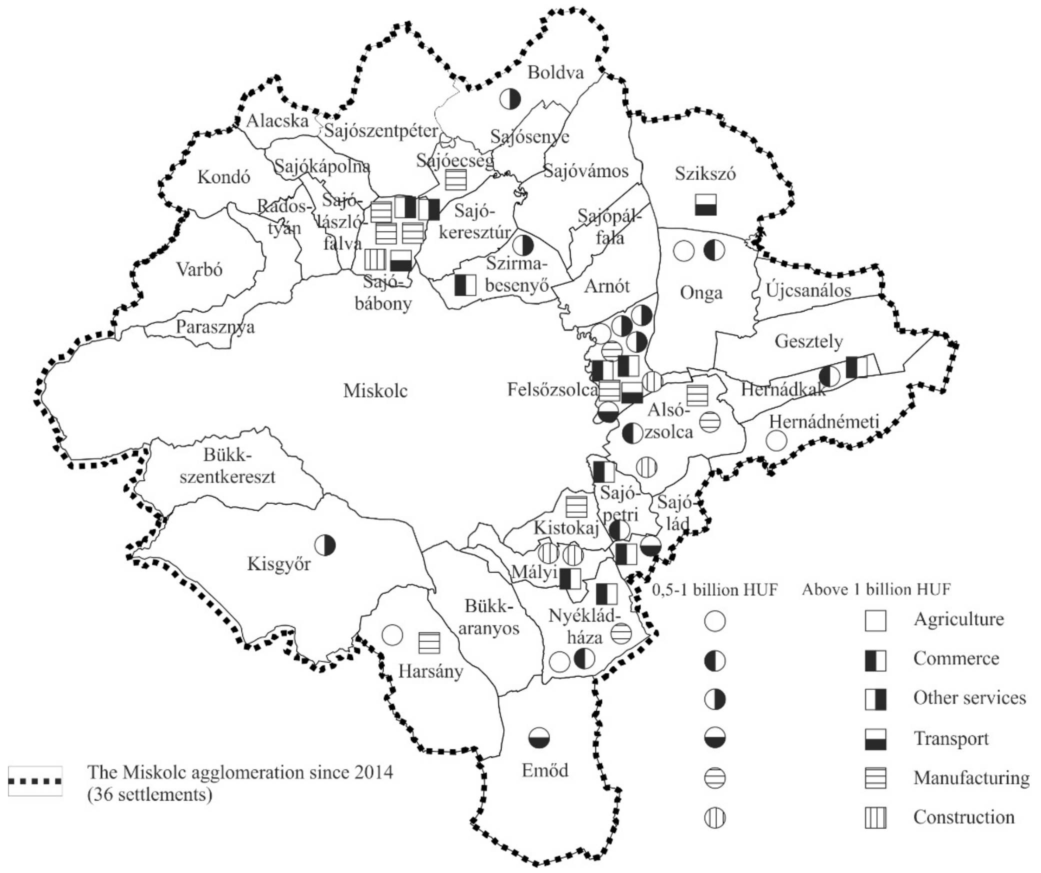

Figure 2. Active businesses with more than 500 million HUF annual net sales and their main activity

As regards the geographical location and net sales of businesses, it can be concluded that Arnót, Kistokaj, Bükkszentkereszt, Újcsalános and Sajókápolna are characterized by high or medium company density, and by companies with predominantly low net sales. Some of these settlements also show unambiguous suburban social features with significant differences among settlements and peculiarities characteristic of the Miskolc agglomeration. Kistokaj and

Bükkszentkereszt are the two most characteristic poles of this economic differentiation. Also a peculiar part of this differentiation is Kisgyőr, where, except for a real estate company, all active businesses had less than 50 million net sales. In this respect, Bükkaranyos is also similar, i.e. in the case of suburban settlements west of Miskolc, service companies with low net sales and economic activities related to the hilly environment became important (figure 2).

The basic data of the 21 companies with the highest net sales (above 1 billion HUF) in the Miskolc agglomeration are summarized in table 3. The seven companies with the highest net sales were in 27-75th place on the TOP 100 list of companies in Borsod-Abaúj-Zemplén County (table 3), their total net sales were above 50 billion HUF (50 648 075 HUF), which accounted for 65% of the revenues of the 21 companies. However, these seemingly high net sales are dwarfed by net sales of companies on the TOP 10 list of companies in Borsod-Abaúj-Zemplén County (table 4). In 2014, the BorsodChem company in Kazincbarcika had the highest net sales (459 billion 983 million HUF) in Borsod-Abaúj-Zemplén County, whose revenues decreased somewhat in 2015, but it kept its leading position.

Table 3. Businesses of the Miskolc agglomeration with the highest (above 1 billion HUF) net sales (2015)
(Data source: Edited by the author according to the list of TOP 100 companies in Borsod-Abaúj-Zemplén County (2010) and the Opten Company Database 2016)

Company	Headquarter/ premise	Net sales (millionHUF)	Main activity
32. EUROFOAM Hungary Poliuretán Gyártó Kft.	Sajóbábony	11 129 921	manufacture of plastics
27. ÖKOIL Alapanyag Előállító és Kereskedelmi Kft.	Sajóbábony	11 068 433	manufacture of oil
33. SICTA Gyártó, Keresk. és Szolg. Kft.	Felsőzsolca	7 314 483	metalworking
39. Sanmina Magyarország Elektr. Részegységgyártó Kft.	Alsózsolca	6 359 287	metalworking, powder metallurgy
75. KISCHEMICALS Gyártó és Kereskedelmi Kft.	Sajóbábony	5 784 924	manufacture of agricultural chemicals
56. Sajt Kalmár Keresk. Kft.	Sajólád	4 843 776	wholesale of milk products, eggs, and fat
58. Fireplace Kft.	Kistokaj	4 147 251	manufacture of non-electric household appliances
KIS Szerelő és Kereskedő Kft.	Sajóbábony	3 779 441	Mechanical, electrical, and plumbing construction
BHS Trans Kft	Szikszó	3 650 160	road freight transport
BORSOD AGROKER Mezg. Termelőeszköz Kereskedelmi Zrt.	Mályi	2 902 713	wholesale of cereals, tobacco, seeds, and fodder
EUROLUX-TRANS Nemzetközi Fuvarozási, Száll. és Ker. Kft.	Felsőzsolca	2 811 060	road freight transport
ÉMK Észak-Magyarországi Környezetvédelmi Kft.	Sajóbábony	2 521 613	hazardous waste management and disposal
SAJÓKÖRNYÉKI Termelői és Értékesítői Szövetkezet	Nyékládháza	1 851 600	wholesale of livestock
ORBÁN - MORVAI Kereskedelmi és Szolgáltató Kft.	Sajópetri	1 629 280	wholesale of waste
KISERŐ Energiaszolgáltató Kft.	Sajóbábony	1 459 424	steam providing, air conditioning
BENZOL Ipari, Ker. és Szolg. Kft.	Hernádkak	1 258 013	retail of fuel
HUN-Therm Consulting Ker., Szolgáltató és Tanácsadó Kft.	Felsőzsolca	1 197 405	wholesale of wood, building materials, and sanitary products
Hőtechnika-Észak Építő és Keresk. Kft.	Sajóecseg	1 084 929	manufacture of cold bent steel sections
SVIP Sajóbábonyi Vegyipari Park Nonprofit Kft.	Sajóbábony	1 053 805	supplementary services for land transport
ETÁN '96 Keresk. és Szolg. Kft.	Szirmabesenyő	1 022 118	retail of fuel
FRAMEST Keresk. Szolg- Kft.	Harsány	1 004 895	manufacture of agricultural and forestry machines
Total	-	77 874 531	-

If only the data of tables 3 and 4 are considered, it can be concluded that the companies and groups of Miskolc with the highest net sales had higher net sales than the 21 companies of the agglomeration combined. This also suggests that the economic transformations of the past 25 years have been significant; however, the establishment of businesses in the agglomeration has not been intensive enough to endanger the monocentricity of the economic structure. However, the overall picture is much more complex, since we should not forget about active businesses located in industrial parks of the agglomeration, whose role in the formation of the economic structure is significant despite the fact that they are headquartered outside the urban region.

Table 4. The TOP 10 companies of Borsod-Abaúj-Zemplén Countyaccording to their net sales
(Data source: Edited by the author according to the list of TOP 100 companies in Borsod-Abaúj-Zemplén County (2010) and the Opten Company Database, 2016)

Company	Headquarter/ premise	Net sales 2010 (millionHUF)	Net sales 2015 (million HUF)
1. TVK Nyrt.	Tiszaújváros	356617	413878
2. Jabil Circuit Magyaro. Kft.	Tiszaújváros	276683	285076
3. BorsodChem Zrt	Kazincbarcika	192101	437851
4. ÉMÁSZ csoport	Miskolc	128905	115446
5. AES csoport	Tiszaújváros	69679	n/a
6. Robert Bosch Energy and Body Systems Kft.	Miskolc	68662	276469
7. Jabil Hungary Lp Kft.	Tiszaújváros	65551	58715
8. Robert Bosch Power Tool Kft.	Miskolc	57732	95983
9. Borsodi Sörgyár Kft.	Bőcs	n/a	33639
10. BC Energiakereskedő Kft.	Kazincbarcika	34447	53798

THE INDUSTRIAL PARKS OF THE MISKOLC AGGLOMERATION

In this respect, data also indicate that agricultural production, processing agricultural products and the food industry is relatively underrepresented in the inner part of the urban region, significant agricultural production only occurs in the outer parts of the urban region. Therefore, I extended my investigation to the analysis of companies and their activities located in the industrial parks of the Miskolc agglomeration. Initially, industrial parks were primarily set up in former industrial sites with usable infrastructure (e.g. Diósgyőr, Sajóbábony, etc.), however, nowadays investors prefer Greenfield sites (e.g. Miskolc, Szikszó, etc.) instead, since the out-of-date infrastructure of former industrial sites is commonly regarded as a disadvantage (figure 1).

Here a significant proportion of companies are subsidiary, thus they are not listed in the Opten Company Database and nevertheless, these are concentrated industrial-commercial areas whose economic activities are outstanding with significant net sales. Companies with the highest net sales also concentrate their control functions and production here (table 5), but they reinvest only a tiny fragment of their net sales. In the case of the four industrial parks in the Miskolc agglomeration, once there was also a precedent for a professional investor taking over some part of the production (e.g. in Sajóbábony), but it was more common that local governments and market players started to develop new industrial parks outside former industrial sites. A great number of companies are concentrated in the industrial parks of Felsőzsolca and Sajóbábony. Of the 36 companies of the Felsőzsolca Industrial Park only two are headquartered locally, more than half of the companies (19) are headquartered in Miskolc (e.g. ADEPTUS Inc., Eurolux-Trans Ltd., Mega Ltd., Metrószer Ltd., Mini Transport Ltd., Miskolc HÁLÉP 2000 Ltd., Unilift 2000 Ltd. etc.), while four companies are headquartered in Budapest (e.g. Reinvest Millennium Ltd., SAG Hungária Ltd. etc.), and Arnót (Betonszín Inc., Csécsi-Transz Ltd., etc.). Companies headquartered in Hódmezővásárhely (Süd-Bau Ltd.) and Nádudvar (KITE Inc.) are also present. The number of industrial parks is going to increase, since the local representative bodies of Tokaj and Szikszó decided together in early 2016 that the Tokaj Industrial Park would be established within the area of the Szikszó Industrial Park. The reason for this decision is that Tokaj is a world heritage site, where strict environmental regulations have to be followed.

Table 5. Some features of industrial parks and logistic warehouses of the Miskolc agglomeration (2015)
(Data source: Edited by the author according to the homepages of industrial parks and logistics bases)

Industrial park	Settlement	Year of foundation	Active businesses		
			2002	2016	
			Total	Total	out of which local
Chemical Park	Sajóbábony	1998	15	35	21
Industrial Park	Felsőzsolca	1998	17	36	2
Industrial Park	Alsózsolca	2000	10	10	1
Borsod LogisticsBase	Mályi	2010	-	5	-
Industrial Park until 2014, then Logistic warehouse	Szikszó	2000 2014	6 -	n/a	n/a
Industrial Park (planned)	Nyékládháza	till 2020	-	-	-
Industrial Park (planned)	Szirmabesenyő	till 2020	-	-	-

Years or sometimes even decades are needed to achieve the results expected from industrial parks; long-term success can only be achieved if companies manage to integrate into the economy of the region. This means that their development is in harmony with the regional and urban development concepts, moreover, small and medium enterprises manage to become suppliers of multinational companies.

THE SECTORAL DISTRIBUTION OF ACTIVE BUSINESSES OF THE MISKOLC AGGLOMERATION

During the analysis of the database, the distribution of active businesses by economic sectors caused difficulties, since these relations could not be clarified precisely in every case. However, this problem affected only 1-2% of the database; therefore realistic distributions could be detected. The sectoral distribution of active businesses (tables 6 and 7) significantly differs from what was previously expected. The low number of agricultural enterprises and the marginal presence of mining is absolutely surprising, but it indicates structural changes. The outstanding weight of construction is emphasized in analyses by the HCSO (e.g. 2011 Census) and in the Integrated Urban Development Plans of Miskolc. The dominance of services is clear, however, it is noteworthy that there were only two companies in the 35 settlements of the agglomeration whose main activities were in the field of education and had more than 20 million HUF net sales in 2015.

Table 6. Number of active businesses in the towns of the Miskolc agglomeration by economic sectors (2015)
(Data source: Edited by the author according to the Opten Company Database, 2016)

Towns	Agri-culture	Industry			Services				
		mining	construc-tion	manu-facturing	health-care	edu-cation	tran-sport	trade	other
Felsőzsolca	4	2	19	6	3	-	7	19	14
Sajószentpéter	-	-	8	10	9	1	-	19	11
Nyékládháza	3	-	8	6	4	1	2	16	8
Szikszó	-	-	7	5	6	-	1	10	12
Alsózsolca	1	-	12	5	3	-	2	8	5
Onga	2	-	8	3	-	-	2	9	8
Sajóbábony	-	-	3	6	2	-	-	3	11
Emőd	2	-	2	1	1	-	8	3	4
Total	12	2	67	42	28	2	22	87	73

Table 7. Number of active businesses in the villages of the Miskolc agglomeration by economic sectors (2015)
(Data source: Edited by the author according to the Opten Company Database, 2016)

Villages	Agri-culture	Industry			Services				
		mining	construc-tion	manu-facturing	health-care	edu-cation	tran-sport	trade	other
Mályi	-	-	13	7	3	-	-	22	8
Szirmabesenyő	-	-	7	3	7	-	3	14	8
Kistokaj	-	-	4	1	3	-	5	8	9
Hernádnémeti	1	-	2	2	-	-	1	10	8
Arnót	1	-	5	2	1	-	5	4	5
Gesztely	2	-	1	1	3	-	-	4	4
Harsány	1	-	2	4	-	-	-	5	2
Hernádkak	-	1	-	-	-	-	2	7	2
Boldva	-	-	-	1	1	-	1	3	4
Sajólád	-	-	1	-	-	-	3	5	-
Kisgyőr	1	-	1	-	-	-	-	3	3
Bükkszentkereszt	-	1	1	1	1	-	1	1	2
Bükkaranyos	-	-	2	-	-	-	-	1	5
Sajópetri	-	1	1	-	1	-	-	4	-
Újcsanálos	1	-	1	-	-	-	-	3	1
Sajóecseg	-	1	-	2	-	-	-	-	2
Varbó	-	-	2	-	-	-	1	-	2
Sajókeresztúr	-	-	-	1	-	-	-	3	-
Sajóvámos	-	-	2	1	-	-	-	-	1
Sajókápolna	-	-	-	1	-	-	-	1	1
Sajópálfala	-	-	-	1	-	-	-	2	-
Alacska	-	-	2	-	-	-	-	1	-
Sajólászlófalva	1	-	-	-	-	-	-	1	-
Parasznya	-	-	1	-	-	-	-	-	1
Radostyán	-	-	-	1	-	-	-	-	1
Kondó	-	-	1	-	-	-	1	-	-
Sajósenye	-	-	1	-	-	-	-	-	-
Total	8	4	50	29	20	-	23	102	69

By a more detailed examination of the sectoral distribution it can be stated that retailing, car trading and related services are widely spread especially in settlements located along the roads to Miskolc. In this respect, data also indicate that agricultural production, processing agricultural products and the food industry is relatively underrepresented in the inner part of the urban region, significant agricultural production only occurs in the outer parts of the agglomeration. Within manufacturing (besides construction and within that residential construction) only the production of metal structures is prevalent in Felsőzsolca and Mályi. Metal processing and metalworking is characteristic in Alsózsolca and Szirmabesenyő, while the manufacturing of electronic products is typical in Mályi. Sajóbábony is the home of chemical companies, while the food industry is present in Sajólád (meat products) and Hernádnémeti (baking industry).

The proportion of the construction industry in Mályi, Felső- and Alsózsolca, and Nyékládháza is above the average of the 35 examined settlements. With few exceptions wholesale trade is present in every town; more than 15% of the examined companies belong to this sector. The wholesale of consumer goods as well as raw materials, and sections is characteristic, followed by the wholesale of food products and chemicals in importance. As regards retailing, the proportion of companies engaged in the retail of cars and fuel is higher than that of predominantly food and beverages retailers, however, the net sales of tobacco shops and pharmacies are also significant. The number of motor vehicle and fuel retailers is significant in Mályi, Kistokaj and Hernádkak. Freight transport, logistics and related services play an outstanding role in the whole region, 6.7% of companies are in this sector. Within this sector most companies are concentrated in Felsőzsolca, Emőd, Kistokaj and Mályi. Arnót is also noteworthy in terms of the number of road freight transport companies. Warehousing companies are present in greater numbers in Mályi and Szirmabesenyő. Among the services assisting business and manufacturing, the number of companies engaged in property management, engineering and consultancy is high in settlements with industrial parks and logistics bases.

THE SPATIAL STRUCTURE OF THE MISKOLC AGGLOMERATION AND ITS ECONOMICALLY POWERFUL CENTRES

Changes in the economic land use of the Miskolc agglomeration were determined by the location choice and net sales of examined businesses. The active businesses of all settlements were considered except for the centre of the agglomeration (Miskolc). As a result, villages where only few businesses with medium net sales were present were also included in the examination. On the outer edge of the agglomeration the impact of active businesses on the formation of the spatial structure of the economy is less detectable (figure 3).

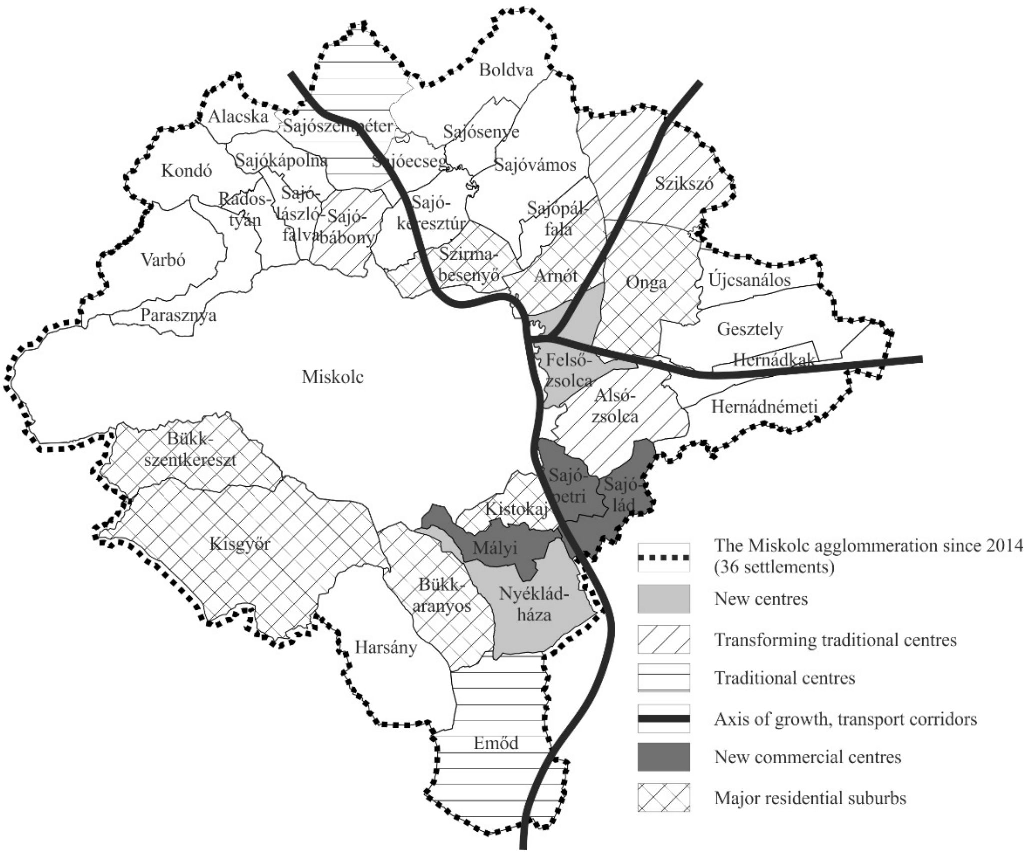

Figure 3. Spatial structure of the Miskolc agglomeration and its functional differentiation

Regarding the economy of the Miskolc agglomeration, it can be concluded that (due to adaptation to the economic challenges of the past quarter-century) its intensity is uneven, its character is more urbanized in areas surrounding developing and transforming centres, while further away from these areas it shows rather rural features. It can be concluded that in certain sectors centralization, while in other sectors decentralization prevails (tables 6 and 7). The latter was characteristic of personal and distributive services and services supporting other economic branches, as well as of commerce, logistics and recreational functions which concentrated in towns. Also, the role of technological and industrial parks of towns is increasing. Of the villages only four (Kistokaj, Mályi, Szirmabesenyő, Hernádnémeti) can keep up with the towns of the agglomeration. According to research results the changes and peculiarities of the geographical structure of the Miskolc agglomeration can be summarized as follows:

- the functions of the inner part of the agglomeration have been enriched, especially in the area of production related services, but its volume has not been as large as was previously expected, i.e. a drastic gravity shift has not occurred, instead, the economic structure of these settlements has become more diverse. Overall, the balance between the economy of Miskolc and the agglomeration has been preserved;
- due to new roles in services the connections within the spatial structure have been enriched, but at the same time they have concentrated more than ever in some settlements;
- in some settlements the number of logistics, distributive and large area services has increased. These settlements are also the nodes of fixed track transport;
- some active businesses exploit the benefits of the size of the economy of Miskolc and specialize in certain manufacturing or business activities, and urban functions;
- many active businesses may decide to move to the agglomeration, because it offers cheaper and larger sites, but these companies still serve primarily the centre city (Miskolc), especiallythose engaged in commerce (e.g. commerce of motor vehicles, etc.), transport (e.g. road freight forwarding) and construction;
- out of the settlements of the agglomeration only 8-10 settlements can be regarded as unambiguouswinners of the socio-economic transformations of the past quarter-century;
- the towns of the agglomeration are not or hardly able to offer real economic alternative to the centre city, since the restructuring of the economy (e.g. new industrial parks) launched developmental processes both in the city centre of Miskolc and in other parts of its administrative area;
- active businesses of settlements on the outer edge of the agglomeration (which are not affected by suburbanization) show signs of economic deterioration. Although manufacturing is present in towns with industrial traditions (e.g. Sajóbábony, Sajószentpéter, etc.), their economy is still characterized by less specialized services;
- the Miskolc agglomeration has not become polycentric; it has remained a monocentric urban region up till now, where only a small fragment of settlements showsa unique character and specialization despite the differentiating processes.This specialization is primarily reflected in agricultural and industrial activities;
- the economy of the Miskolc agglomeration shows a mixed picture wherein the legacy of socialism and the selective renewal due to the economic processes of the past quarter-century are present at the same time.

SUMMARY

The differential economic transformation of the Miskolc agglomeration has not only resulted in the establishment of new infrastructure (e.g. logistics centres on the edge of towns and cities, shopping malls, etc.), but also the strengthening of new centres of industrial production (e.g. industrial parks, industrial premises, etc.). The understanding of the economic transformation of the Miskolc agglomeration can provide a realistic basis for the examination of the deconcentrating and reconcentrating settlement network and for the exploration of some of the processes taking place here. When choosing locations, businesses take into account factors that are the most important for them. However, the geographical pattern of location choice lacking universal rules has not resulted in chaotic conditions. In this urban region it can be observed that businesses are concentrated according to economic sectors, which suggests spatial specialization. The result of this specialization is that by now the economic functions of the Miskolc agglomeration have widened and differentiated. The towns of the agglomeration, however, cannot or hardly be regarded as economic competitors of Miskolc, i.e. the urban region has not become polycentric, and these towns' inhabitants are not totally independent of Miskolc. As a result of these processes the land use pattern, the spatial structure of the economy and the landscape of the Miskolc agglomeration are undergoing transformation.

The prominent role of Miskolc has remained in the area of enterprise development and attracting investors, the infrastructural and human resource conditions provide an opportunity for the establishment of a modern inner industrial-commercial zone. In the settlements of the inner zone of the agglomeration, there is an opportunity for the establishment of an industrial area providing industrial and business incubation services and due to special conditions it is possible to developbusiness, administrative, human and logistics services of county and regional significance.

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